WHAT IS CLAIMED IS:

1. An optical scanner in an image forming apparatus, comprising:

a scanning optical system that forms an optical scanning path;

a pair of optical detecting units arranged at two positions on the optical scanning path for detecting a write-start position and a write-end position to measure a time for scanning from the write-start position to the write-end position; and

an optical housing that houses at least the scanning optical system and the optical detecting units, wherein

the optical detecting units are mounted on the optical housing via an intermediate member having a thermal expansion coefficient smaller than that of the optical housing.

2. The optical scanner according to claim 1, wherein the intermediate member is mounted on the optical housing at a position having least thermal deforming.

3. The optical scanner according to claim 1, wherein a side of the write-start position of the intermediate member is mounted on the optical housing.

4. The optical scanner according to claim 1, wherein the scanning optical system forms a plurality of optical scanning paths.

5. The optical scanner according to claim 4, wherein the thermal expansion coefficient of the intermediate member provided for each of the optical scanning paths is made different from each other.

6. An optical scanner in an image forming apparatus, comprising:

a laser source that emits a laser beam;

a rotating mirror deflector that deflects the laser beam;

a scanning optical system that forms an optical scanning path for scanning a peripheral surface of an image carrier with the laser beam deflected by the rotating mirror deflector;

an optical detecting unit that detects a synchronous detecting beam that is a part of the laser beam deflected by the rotating mirror deflector; and

an optical housing that houses at least the laser source, the rotating mirror deflector, the scanning optical system, and the optical detecting unit, wherein

the optical detecting unit is arranged at a position on an optical path of the synchronous detecting beam in such a way that a direction of a displacement of the optical detecting unit resulting from a deforming of the optical housing due to a thermal expansion is on the optical path of the synchronous detecting beam.

7. The optical scanner according to claim 6, wherein the optical detecting unit is located outside of an image forming area, and arranged at two positions for detecting the write-start position and the write-end position.

8. The optical scanner according to claim 6, wherein the optical detecting unit is arranged in such a way that an incident angle of the synchronous detecting beam is substantially normal to an acceptance surface of the optical detecting unit.

9. The optical scanner according to claim 6, wherein the optical detecting unit is arranged opposite to the rotating mirror deflector, with the scanning optical system therebetween.

10. The optical scanner according to claim 6, wherein the optical detecting unit is arranged opposite to the laser source, with the rotating mirror deflector therebetween.

11. The optical scanner according to claim 6, wherein the optical detecting unit is arranged at a corner of the optical housing.

12. The optical scanner according to claim 6, wherein the optical detecting unit is arranged near a fastening portion of the optical housing where the optical housing is fastened to a main body of an apparatus.

13. The optical scanner according to claim 6, wherein the optical housing is made of resin.

14. An optical scanner in a color image forming apparatus, comprising:

a plurality of laser sources that emits a plurality of laser beams;

a rotating mirror deflector that deflects the laser beams;

a plurality of scanning optical systems that forms a plurality of scanning paths for each of the laser beams deflected by the rotating mirror deflector;

an optical housing that houses at least the laser sources, the rotating mirror deflector, and the scanning optical systems; and

a plurality of optical detecting units that is mounted on the optical housing at positions where a part of each of the laser beams deflected by the rotating mirror deflector is irradiated, wherein

a distance between each of the optical detecting units and a center of the rotating mirror deflector is set substantially same.

15. The optical scanner according to claim 14, wherein the optical housing includes cooling fins located near the detecting units.

16. The optical scanner according to claim 15, wherein

the optical housing further includes an airflow generating space in which an airflow is generated around the rotating mirror deflector with a rotation of the rotating mirror deflector, and

a downstream side of the airflow has larger number of the fins than an upstream side of the airflow.

17. The optical scanner according to claim 15, wherein a side of the optical housing near a heat source in the image forming apparatus has larger number of the fins than a side away from the heat source.

18. The optical scanner according to claim 15, wherein the fins are arranged at an outer surface of the optical housing.

19. An image forming apparatus comprising:

an optical scanner that includes

a scanning optical system that forms an optical scanning path;

a pair of optical detecting units arranged at two positions on the optical scanning path for detecting a write-start position and a write-end position to measure a time for scanning from the write-start position to the write-end position; and

an optical housing that houses at least the scanning optical system and the optical detecting units, wherein the optical detecting units are mounted on the optical housing via an intermediate member having a thermal expansion coefficient smaller than that of the optical housing;

an image forming unit that includes an image carrier, forms a toner image by developing an electrostatic latent image written on the image carrier with a toner, and transfers the toner image onto a recording medium; and

a fixing unit that fixes the toner image transferred on the recording medium.

20. The image forming apparatus according to claim 19, wherein the intermediate member is fixed to the image forming apparatus together with the optical housing, by using a mounting member for mounting the optical housing on the image forming apparatus.

21. An image forming apparatus comprising:

an optical scanner that includes

a laser source that emits a laser beam;

a rotating mirror deflector that deflects the laser beam;

a scanning optical system that forms an optical scanning path for scanning a peripheral surface of an image carrier with the laser beam deflected by the rotating mirror deflector;

an optical detecting unit that detects a synchronous detecting beam that is a part of the laser beam deflected by the rotating mirror deflector; and

an optical housing that houses at least the laser source, the rotating mirror deflector, the scanning optical system, and the optical detecting unit, wherein the optical detecting unit is arranged at a position on an optical path of the synchronous detecting beam in such a way that a direction of a displacement of the optical detecting unit resulting from a deforming of the optical housing due to a thermal expansion is on the optical path of the synchronous detecting beam;

an image forming unit that includes an image carrier, forms a toner image by developing an electrostatic latent image written on the image carrier with a toner, and transfers the toner image onto a recording medium; and

a fixing unit that fixes the toner image transferred on the recording medium.

22. An image forming apparatus comprising:

an optical scanner that includes

a plurality of laser sources that emits a plurality of laser beams;

a rotating mirror deflector that deflects the laser beams;

a plurality of scanning optical systems that forms a plurality of scanning paths for each of the laser beams deflected by the rotating mirror deflector;

an optical housing that houses at least the laser sources, the rotating mirror deflector, and the scanning optical systems; and

a plurality of optical detecting units that is mounted on the optical housing at positions where a part of each of the laser beams deflected by the rotating mirror deflector is irradiated, wherein a distance between each of the optical detecting units and a center of the rotating mirror deflector is set substantially same;

an image forming unit that includes an image carrier, forms a toner image by developing an electrostatic latent image written on the image carrier with a toner, and transfers the toner image onto a recording medium; and

a fixing unit that fixes the toner image transferred on the recording medium.